



Change Management Board Meeting

Tuesday, January 26, 2016

Video Conference: CO-Burns Video Bridge 1

Audio Only: 850-414-3101

Do NOT Put On Hold **Call is Being Recorded**

GoToMeeting:

<https://www2.gotomeeting.com/join/371021466>



Welcome and Call for Quorum

Derek Vollmer, P.E., CMB Chairman



Agenda



| Time | Item | Lead |
|-------------|---|----------------------------|
| 1:30 – 1:40 | Welcome and Call for Quorum | Derek Vollmer |
| 1:40 – 1:45 | Previous Meeting Recap & Action Item Review | Derek Vollmer |
| 1:45 – 1:55 | ITS WAN Update | Randy Pierce & Frank Deasy |
| 1:55 – 2:10 | SunGuide Software Update | Derek Vollmer |
| 2:10 – 2:15 | RITIS Update | Derek Vollmer |
| 2:15 – 2:35 | Truck Parking Subsystem (TPS) <i>(vote)</i> | Clay Packard |
| 2:35 – 2:55 | SunGuide Lite for SEOC | Clay Packard |
| 2:55 – 3:05 | CMB Process Revisions <i>(vote)</i> | Derek Vollmer |



Agenda



| Time | Item | Lead |
|-------------|---|---------------|
| 3:05 – 3:15 | Break (Tentative) | |
| 3:15 – 3:30 | Ramp Metering Enhancements <i>(vote)</i> | Tucker Brown |
| 3:30 – 3:50 | Database Design Analysis | Clay Packard |
| 3:50 – 4:00 | Small Enhancements (FP 2303 – Preset permissions and FP 2569 – Allow PTZ on a camera in a tour) <i>(vote)</i> | Derek Vollmer |
| 4:00 – 4:05 | Statewide ITS Architecture and Systems Engineering Update | Derek Vollmer |
| 4:05 – 4:25 | Open Discussion | Derek Vollmer |
| 4:25 – 4:30 | Review Action Items | Derek Vollmer |

CMB agenda, slides, and attachments posted here:

http://www.dot.state.fl.us/trafficoperations/ITS/Projects_Deploy/CMB.shtm



Previous Meetings Recap and Action Items Review

Derek Vollmer, P.E., CMB Chairman



Previous Meeting Action Items



1. CO to look into getting C2C connection data into RITIS. (Open Action Item)
2. D. Vollmer with CO will get with Jeremy Dilmore in District 5 on the RITIS contract. (Open Action Item)
3. CO to look into including arterial detectors feeding into the ramp metering algorithm. (Open Action Item)
4. D. Vollmer with CO to reach out to Jennifer Fortunas with CO about the express lanes software effort. (Open Action Item)



ITS Telecommunications Update

Randy Pierce & Frank Deasy, P.E.



ITS WAN Update



- ITS WAN – District IP Re-allocation Effort
 - All Districts have been notified of their assigned CIDR blocks for the Next Generation Statewide Network.
 - District 5 is actively migrating to assigned CIDR blocks and this step must be completed prior to statewide adoption.
 - District 6 and MDX are using their assigned CIDR blocks for new deployments
- Multicast (Re)Addressing
 - D3, D4 & D6 completed their multicast addressing
 - Remaining Districts should (re)address their multicast devices now to resolve any overlapping addresses
 - D1, D5, D7 & MDX are in process
 - D2 and FTE not implemented at Layer 3 at this time
 - Multicast video can then be shared statewide
 - Goal is to have statewide video available at the State Emergency Operations Center



ITS WAN Update



- Tallahassee Fiber Ring
 - Network is operational
 - Logical configuration of hardware is still in progress
 - Will provide traffic camera video to State Emergency Operations Center
 - Enhances connectivity to ITS WAN for TERL and District 3



ITS WAN Update



- FTE Fiber Use – Work Needing to be Completed
 - Southeast Florida Fiber Re-route Project (D4/D6/Andytown/FTE Pompano/McArthur Sunrise) – splicing required at key FTE locations
 - Everglades Academy – now planning for RF links at the end of the HEFT rather than fiber optics – tie into existing FTE fiber at end of HEFT
 - District 5, Turkey Lake Redundancy Project – planning ongoing, dependent upon funding
 - FTE has requests in from Central Office to have work scheduled
- D5 to Turkey Lake/FTE Tolls Redundancy connection
 - D5 fiber work is complete
 - FTE fiber allocation along SR-528 is Green Buffer 33, 34, 35, and 36 – requires splicing at Orlando South Tower site, FTE Master Hub 8.3, and SR91 & 417 interchange



ITS WAN Update



- ITS WAN – D5 to D7 Backbone Upgrade
 - Could be rolled into the D5 – Turkey Lake Redundancy Project
 - Upgrade optical path from OC-48 SONET to 10Gig DWDM
 - Reallocate existing equipment to spares inventory
- FTE Tolls Middleware Application
 - FTE Tolls has requested a consolidated connection over the ITS WAN for all Districts
 - D4 still on separate Layer 2 Connection via separate FDOT fiber
 - FTE Tolls connection to the ITS WAN being upgraded to a Layer 3 connection with routing to support the 95Express project and future Managed Lanes projects
 - Southeast Fiber re-routing
 - D4 work is completed
 - Waiting for FTE approval to access splice enclosures – SR 91 & I-575; SR-91 & W Commercial Blvd; patch panel work at McArthur-Sunrise FDOT microwave shelter.



ITS WAN Update



- Florida Keys Microwave Project
 - ITS Central Office is designing an upgrade of the unlicensed microwave system along Overseas Highway for ITS (cameras, DMS, and traffic counters).
 - Site Surveys performed in May
 - Replacement system will use licensed RF spectrum
 - New system will be resistant to interference
 - Bandwidth for transporting video and other data traffic will be increased
 - Optional component for an “express route” to provide G.8032 Ethernet Ring Protection Switching in the event of equipment failure or microwave fade



QUESTIONS?

Randy Pierce & Frank Deasy, P.E.

Randy.Pierce@dot.state.fl.us

Frank.Deasy@dot.state.fl.us



SunGuide Software Update

Derek Vollmer, P.E., FDOT



Status of Upgrades



- D3 Chipley – 6.1 installed week of July 20th
- District 2 Upgraded to 6.1 on August 11th
- City of Tallahassee Upgraded to 6.1 on August 31st
- CFX upgraded to 6.1 week of August 31st
- FTE upgraded to 6.1 week of October 5th
- D4 Arterials upgraded to 6.1 week of October 19th
- D4 upgraded to 6.1 on November 18th
- MDX upgraded to 6.1 week of December 7th
- D7 tentative upgrade to 6.1 in February

6.1 Patch 1 Hotfixes

- Released
 - Hotfix 1 – FPs 3366, 3368, 3370, 3371, 3378, 3379 EM and Map fixes
 - Hotfix 2 – FPs 3257, 3395 Web Relay single and quad beacon support
- Candidate
 - Hotfix 3 – BlueMac driver and arterial algorithm
 - Hotfix 4 – FP 3430 C2C publisher roadway name



Release 6.2



- Map out of Internet Explorer
- Waze Phase 2
- WWD automatic responses
- Dismiss redundant TSS alerts
- Response plan improvements
- <http://sunguidesoftware.com/releases/release-6-2-future>

6.2 Factory Acceptance Test

- Week of January 11th
- Successful testing
- Observations:
 - Waze
 - number of alerts when turned on
 - Behavior consistent with FHP CAD
 - Wrong way driving
 - Manual events from map
 - Information about removed signs for automatic activation

6.2 Independent Verification and Validation

- Dry Runs start Wednesday, January 27th
- Testing week of February 8th
- Release end of March (sooner if possible)



QUESTIONS?

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us



RITIS Update

Derek Vollmer, P.E., FDOT



RITIS Issues



Open Issues

- Null Data / Poor Detector Health
- Duplicate detectors showing in Detector Tools

Recently Closed Issues

- Sum of Volume for Lanes and Zones Not Matching



Current Status of Plans for RITIS



- Develop a Webinar Training on RITIS
 - Content 95% complete
 - Media Team to develop TRESS computer-based training
- In Progress
 - Bluetooth data into RITIS
 - Historical Detector Names and ID Presentation
 - Zone length added to raw data download
- Completed
 - Email alert when data issues occur
 - Broward County and City of Tallahassee Detectors Added to RITIS



RITIS Issues



- Please send RITIS issues with detailed information to:
Derek.Vollmer@dot.state.fl.us.



QUESTIONS?

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us



Truck Parking Subsystem (TPS)

(with vote)

Clay Packard, P.E., Atkins

Introduction

- Purpose:
To enhance highway safety
- Objective:
Inform commercial vehicle drivers of parking availability at public parking facilities

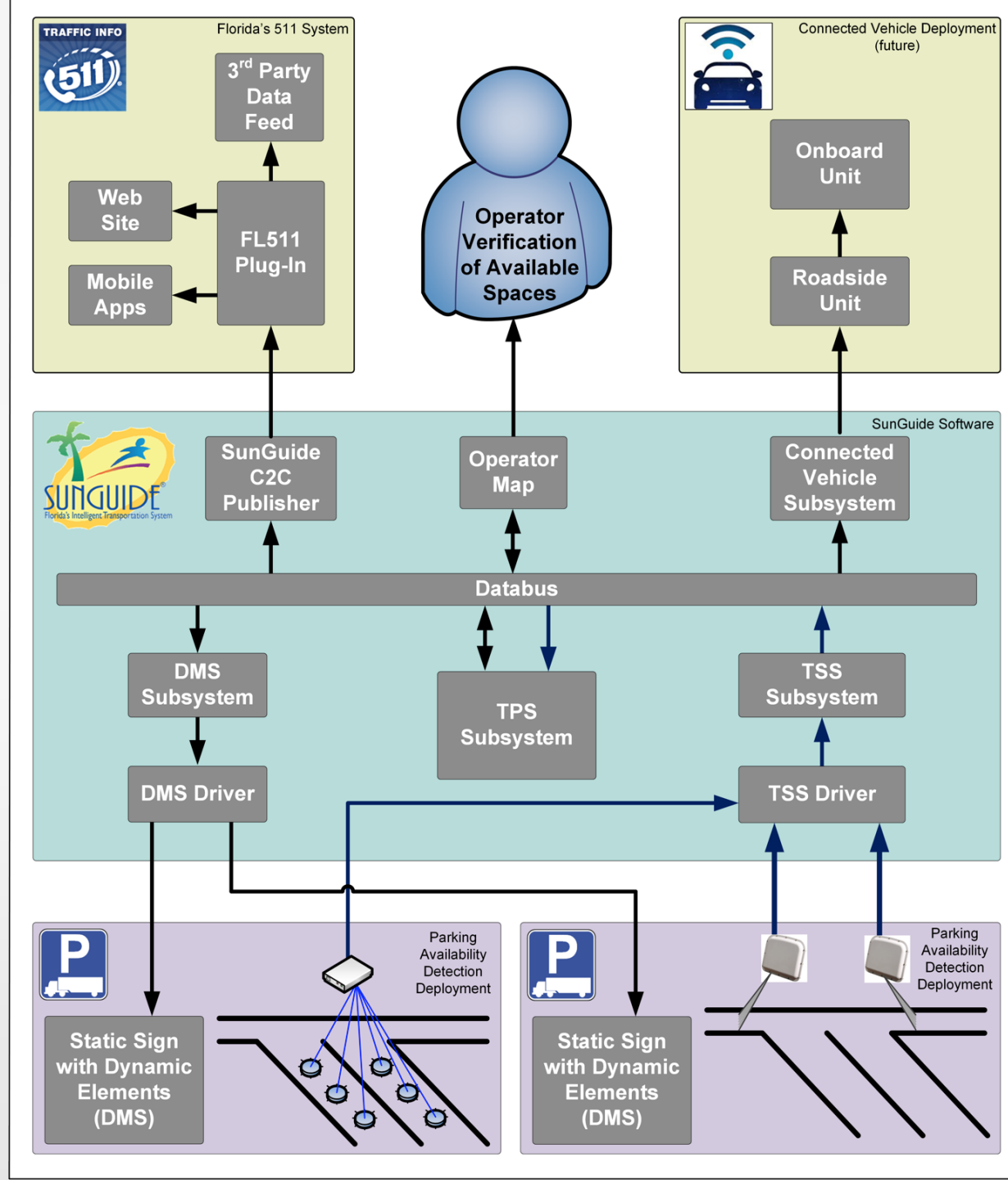


System Concept

- Parking facility instrumented
 - parking space presence detection sensors
 - CCTV cameras
- Presence detection information sent to SunGuide software
- Operator alerted when low availability occurs
- Operator visually verifies and corrects availability
- Drivers informed of availability via embedded DMS and FL511 app
- FUTURE Phase: SunGuide predicts availability using historical data analysis (not voted on at this time)

Software Architecture

Change
Management
Board



Desktop Video Wall 1*

Set Op Status Refresh Status Find on Map Truck Parking Configure

| Name | Op Status | Roadway/Direction | Parking Availability |
|---------------|----------------|--------------------|----------------------|
| Rest Area | Out of Service | I-295 W Southbound | Full |
| Weigh Station | Out of Service | I-295 W Southbound | 22 |
| Truck Stop | Active | I-295 E Northbound | 83 |
| Rest Area | Active | I-295 E Southbound | 85 |
| Truck Stop | Out of Service | I-295 E Northbound | 5 |

Associated Devices:

Entrance: [I-4 EB MM 25](#) Active Parking Availability: 85

Exit: [I-4 EB MM 25 Exit](#) Active

Camera A: Active

Camera B: Error

Dismiss Alert

Send Count Correction

Associated DMS

[I-4 EB MM 25](#) [I-4 EB MM 10](#)

Show/Hide Video

[J/1] 002-Bosch800HD-Springhill

[J/1] 006-FLIR-ITS-Polk

[J/1] 001-Cohu-Impath-Spr

[J/1] 008-ViconHD-CentLA8

[J/1] 009-AVOS-Q6035

Change Management Board



Operator Map Dialog

NB & EB

Truck Parking

I-75 S

Go to Heads-up Display

Columbia County Rest Area
ETA 5 minutes (6 miles)
Current: 5/10 spaces
Predicted: 6/10 spaces ← **Future**

Alachua County Rest Area
ETA 35 minutes (38 miles)
Current: 4/12 spaces
Predicted: 7/12 spaces ← **Future**

Marion County Rest Area
ETA 64 minutes (70 miles)
Current: 4/8 spaces
Predicted: 6/8 spaces ← **Future**

Sumter County Rest Area
ETA 101 minutes (111 miles)
Current: 6/15 spaces
Predicted: 11/15 spaces ← **Future**

Pasco County Rest Area
ETA 128 minutes (141 miles)
Current: 5/13 spaces
Predicted: 9/13 spaces ← **Future**

Traffic

Travel Times

Truck Parking

Settings & Feedback

FL511 Mobile Apps Screenshots



Rest Area at MM 234
Distance: 14 miles ETA: 12 min
Current Availability
3/10 spaces
Predicted Availability Upon Arrival
2/10 spaces

Rest Area at MM 265
Distance: 45 miles ETA: 39 min
Current Availability
7/10 spaces
Predicted Availability Upon Arrival
4/10 spaces

Future ←

Changes to ConOps Companion from Stakeholder Comments

- When the facility's available parking goes below a configurable minimum display threshold, it displays zero spaces available
- Clarification that predicted availability algorithm would be tested and verified and presented back to CMB for future consideration
- Database will archive information about operator corrections, including operator ID, timestamp, old and new value.
- Ability to associate multiple directions to a facility (if accessible by both directions of travel)
- Few editorial, non-technical changes



Cost

- Cost: \$112,100



QUESTIONS?

(VOTE)

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us



Statewide Emergency Operations Center Traffic Operations Video

Clay Packard, P.E., Atkins

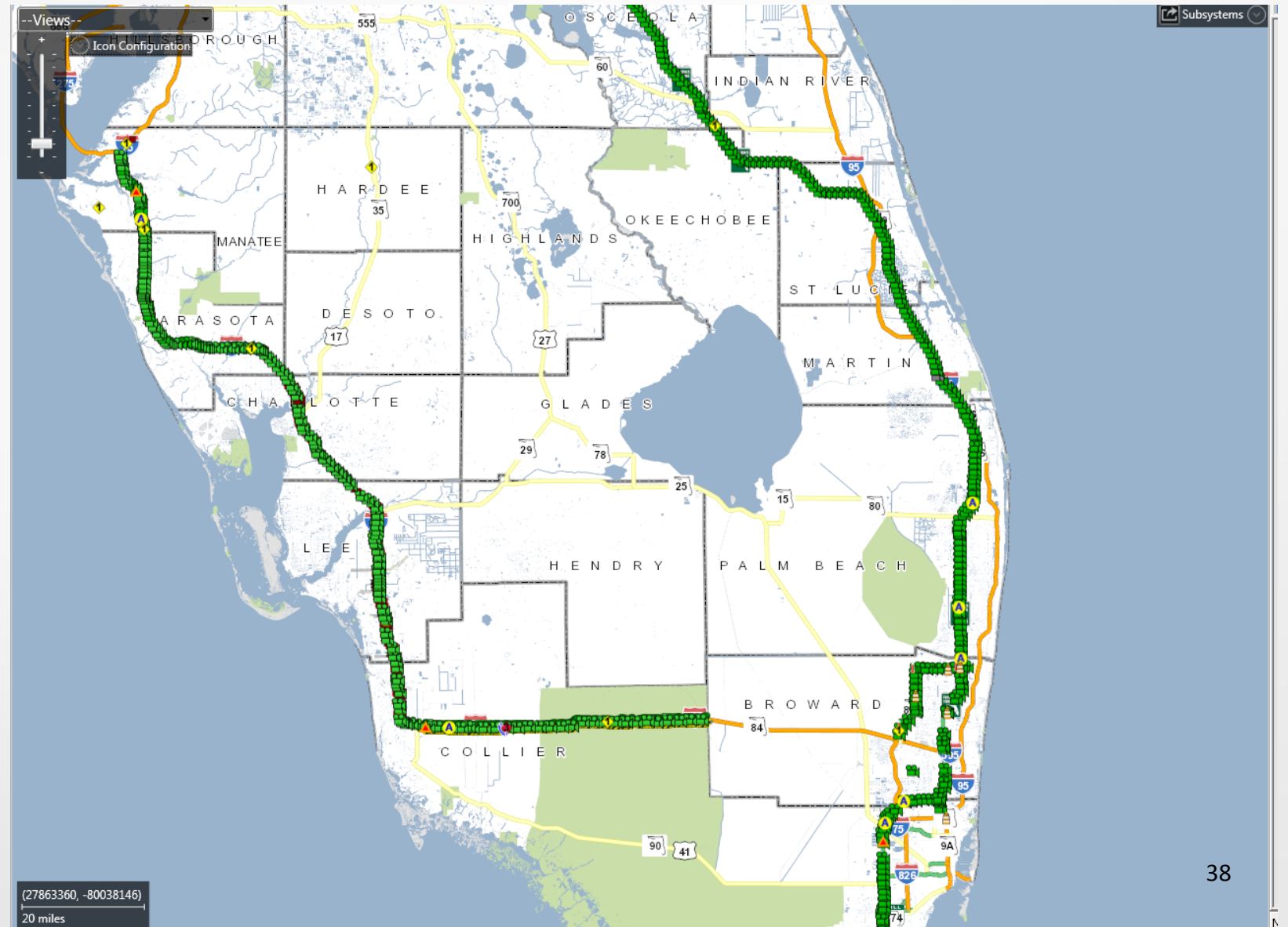
Overview

- Emergency Operations Center (EOC)
 - Brief description of existing EOC mission and operations
 - Needs access to statewide camera video
 - User Interface of camera inventory, preferably on a statewide map
 - Ability to launch video on a computer monitor, and share on a video wall
- Objective: provide EOC with traffic operations video

Solution Overview

- Solution Phases
 - Phase 1 – Connectivity and Proof of Concept
 - Complete when EOC workstation can use VLC to view at least 1 video feed from all Districts
 - Phase 2 – Operator Map and Video on Desktop
 - Complete when EOC workstation can see cameras statewide from the operator map and can use the operator map to launch any camera's video to the Video on Desktop app

Camera Inventory on Operator Map



Video on Desktop

Desktop Video Wall 1*

New Options Layouts Tours

Cameras: ☒ Local ☐ Remote

| Name |
|---------------------------|
| 014_Axis Q6044-CertLab |
| 013_Cohu 3920HD-iMpath |
| 012_Cohu 3120HD IP |
| 010_TKH HSD626 |
| 009_TKH HSD621 |
| 008_ViconHD-CertLab |
| 007_BoschMIC7000 |
| 006_FLIR-ITS Pole |
| 005_Bosch VG5-7130 |
| 004_AD-Coretec-ITS Lab |
| 003_Bosch500 |
| 002_Bosch800HD-Span |
| 001_Axis Q6045-Springhill |
| 237_D6ImpathI95 |
| 236_D6Impath95_NW151 |
| 191_D4VbrickSaw_Sunrise |
| 071_D5Vbrick_71 |
| 046_D5Vbrick |
| 044_D4Vbrick95_SW10 |
| 024_D6Impath24 |
| 022_D4VbrickI95-IS95 |
| 021_D5Vbrick |

0225 95 at Stirling

0021 I-95 AT NW 151 ST

0009 I95 AT SW 8ST

0440 95 at Palmetto

8001 869 at Sunrise Blvd

Not Is null or empty...

39

Device and Network Multicast Configuration

- Enable multicast URL on IP cameras and encoders
- Use District allocated multicast address space
- Configure firewall interface facing ITS WAN to allow multicast video



SunGuide Software Configuration

- Set camera's ITS WAN accessible multicast URL as Default Remote
 - To reuse an existing URL already configured:
change visibility to both and click Enable the Default Remote checkbox:

| Video Streams for 022D4VbrickI95-I595 | | | | |
|---------------------------------------|---------------------------|------------|-------------------------------------|-------------------------------------|
| Name | Url | Visibility | Default Local | Default Remote |
| Default | udp://@232.212.95.22:4444 | Both | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

- To use a new, different URL
Click add new URL, set Visibility to Both or Remote, and Enable the Default Remote checkbox:

| Video Streams for 022D4VbrickI95-I595 | | | | |
|---------------------------------------|---------------------------|------------|-------------------------------------|-------------------------------------|
| Name | Url | Visibility | Default Local | Default Remote |
| Default | udp://@232.212.95.22:4444 | Local | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Default Remote URL | udp://@232.212.95.22:4445 | Remote | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Scope

- Phase 1 Scope:
 - SEOC connection to ITS WAN
 - District video sharing via ITS WAN
 - SEOC Local Workstation VLC testing
- Phase 2 Scope:
 - Upgrade SunGuide Software to Release 6.1 in Districts
 - Configure Remote Multicast URLs in District SunGuide software deployments
 - Develop and deploy SEOC Operator Map & VOD application
 - Integrate SEOC app with District CCTV Inventory via C2C



Next Steps

- Develop Concept of Operations, System Requirements, and Cost
- Finalize Scope, Schedule, and Cost



QUESTIONS?

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us



CMB Process Revisions *(with vote)*

Derek Vollmer, P.E., FDOT

Process Document Changes

- Using the TSM&O logo and updated to reflect the new program name
- Introduction – Removed road miles and budget numbers

Voting Members

- District 1 – Chris Birosak (Alternate – Robbie Brown)
- District 2 – Josh Reichert (Alternates – Donna Danson and Peter Vega)
- District 3 – Lee Smith (Alternates – Mark Nallick, Kenny Shiver, Cliff Johnson, and Amy DiRusso)
- District 4 – Dong Chen (Alternate – Dan Smith)

Voting Members

- District 5 – Jeremy Dilmore (Alternates – Tushar Patel and Jim Stroz)
- District 6 – Javier Rodriguez
- District 7 – Chester Chandler (Alternate – Romona Burke)
- Florida's Turnpike Enterprise – Eric Gordin (Alternate – John Easterling)
- State TEOO – Russell Allen, Randy Pierce, and Derek Vollmer
- MDX – Ivan Del Campo (Alternate – Wang Lee)



Non-Voting Members

- Federal Highway Administration – TBD
- City of Tallahassee – Wayne Bryan
- Central Florida Expressway Authority – Corey Quinn



QUESTIONS?

(VOTE)

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us



Break – 10 min

<http://ipadstopwatch.com/timer.html>



Ramp Metering Enhancements (with vote)

Tucker Brown, SwRI



1081: RM Archive Data Logging



- Currently, TSS data is logging in Data Archive but RM states and configuration changes are not
- Enhancement Request: Log the following information:
 - Central Time of Day Schedule
 - Special Event Schedules
 - Fuzzy Parameters and Rules
 - Inputs to fuzzy logic when a rate change is made
 - Rate Change sent to controllers
 - Controller mode
 - Manual rates
 - Manual changes to Metering Rate Range min and max
 - System status (RM, TSS and driver stop/start; controller down controller back up, comms failure to controller, comms restored to controller, detector offline/online) and any other alerts from these components
 - Violation counts (non-zero only), with timestamp – one minute granularity (or other that is easily extracted from existing data and fine enough granularity to determine if some behavior of the system may be contributing to violations, e.g. correlate with detector failures)
 - Ramp Meter detector configuration changes



1081: RM Archive Data Logging



- Additional Enhancement: Comments for manual rate (or rate range) change
 - Add a comment field for a manual rate change or a manual rate range change
 - Log comment along with the change being made
- RM will send the data to Data Archive (DA) to be logged
- Estimate
 - \$15k



1407: Schedule “Off” mode



- RM currently supports scheduling the Local or Fuzzy Mode to activate
- Enhancement Request: Allow the RM “OFF” state to be scheduled as well
- All scheduling will be moved to SAS for consistent scheduling of actions
- Estimate: \$10k



QUESTIONS? *(VOTE)*

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us



Database Design Analysis

Clay Packard, Atkins



Introduction

- SunGuide database originally a place for configuration data
- SunGuide database not originally scoped for high performance
- SunGuide grew in its use of the database over time, i.e.
 - Data archiving
 - Event management committing all transactions
- SunGuide database usage now needs additional performance enhancements, and database specialists attention
- Database Design Analysis in two phases
 - Phase 1 – preliminary recommendations and objectives for phase 2
 - Phase 2 – results for phase 2 objectives and final recommendations

Overall Objectives

- General analysis – issues, improvements to database model
- Evaluate effectively supporting operational versus archiving and reporting needs
 - i.e. partitioning or archival to separate database?
- Operational Environment Review of District 5's database
 - Specially look at environment based performance measures including input/output operations per second (IOPS) – both to hard disk and RAM

Phase 2 Planned Objectives

- Removal of residual redundant records with performance analysis – FP 1589
- TSS Data archive portion – identify design enhancements of the model
- Ramp metering data archive portion – database design requirements
- Transaction logging analysis
- Event management index analysis and additional recommendations
- Database object naming review and recommendations
- General recommendations



Preliminary General Recommendations

- Add CEASED_USE flags throughout database to support deletes and updates while preserving archived data
- Use connection factories to manage and minimize connections (FP 2233)
- Use views to select objects of a certain type, such as active objects
- Use views with inline selection logic to improve performance
- Index testing strategies for performance improvement
- Employ additional locking strategies to prevent deadlocks
- Data field overloading – separate into multiple fields

Footprint 1589

Multi-faceted issue with parent TSS configuration records

- Multiple records created for each object by Data Archive
 - Fixed in Release 6.1
- Residual Records left behind after Data Archive was fixed
 - Scripts developed and will be made available
 - Before and after performance study will be completed this month
- Archive data model should support attributes, not new records
 - New database model developed and proposed to include attributes



QUESTIONS?

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us

Clay Packard, P.E., Atkins/FDOT

Clay.Packard@dot.state.fl.us



Small Enhancements

FP 2303 & FP 2569 (with vote)

Derek Vollmer, P.E., FDOT



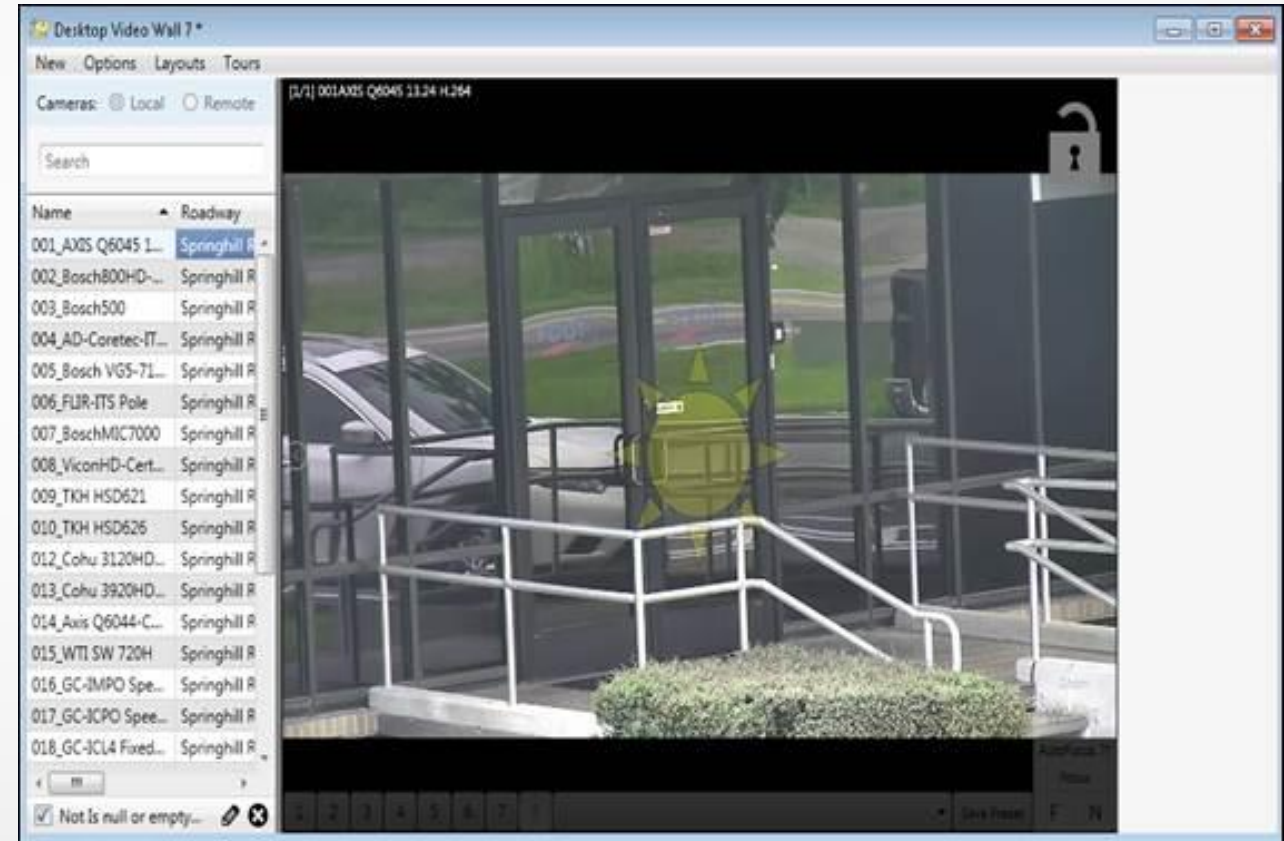
Small Enhancements



- Small Enhancements proposed for including in Release 7.0 / 8.0
- Suggested by SSUG users
- Relatively low effort
- Makes life easier on operations at a detailed level (not major new subsystems or new operation)
- Endorsed by SSUG
- Footprint 2569: Allow ability to PTZ a CCTV in a tour
- Footprint 2303: Permissions to overwrite specific presets

FP 2569: Allow ability to PTZ a CCTV in a tour

- If you hover, the PTZ controls appear just as if it were not a tour
- If the camera is controlled, the tour is paused
- You will be able to move backwards to the correct camera if you “miss it”





FP 2303: Permissions to overwrite specific presets



- Need: to lock down presets 1-4 (or some other configurable value) for all cameras
- New user permission – typically for administrators only
- Configurable number of presets to lock:
<HighestProtectedPresetValue>4</>



Cost and Schedule



- Cost:
 - FP 2569 - \$1500
 - FP 2303 - \$2500
 - Total - \$4000
- Schedule: Release 7.0



QUESTIONS?

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us



Statewide ITS Architecture & Systems Engineering Update

Derek Vollmer, P.E., FDOT



ITS Architecture Updates



- District 1 and 7 ITS Architecture updates were completed 01/09/2015
- District 5 and Turnpike ITS Architecture were completed 04/08/2015
- Statewide, Districts 2 & 3 were completed 08/27/2015
- Remaining Districts ITS Architecture updates will be completed by 12/31/2015
- Districts 4 & 6 Updates were completed 12/28/2015



ITS Architecture Events



- Project Kickoff Meeting – 09/05/2014
- Eight Architecture Kickoff Meetings (All Completed)
- Stakeholder Interviews (All Completed)
- Stakeholder Workshops (All Completed)
- Final Architecture Meeting (12/28/2015)



Systems Engineering



- Minor template changes made (control panel, revision history)
- Templates posted in Word format
- Minor updates to webpage:
 - http://www.dot.state.fl.us/trafficoperations/ITS/Projects_Deploy/SEMP.shtm
- Create templates for required documentation
 - Draft RTVM created



QUESTIONS?

Derek Vollmer, P.E., FDOT

Derek.Vollmer@dot.state.fl.us



Open Discussion

Derek Vollmer, P.E., FDOT



Review Action Items

Derek Vollmer, P.E., FDOT